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NEW NEOTROPICAL TACHINIDAE (DIPTERA)

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This paper includes descriptions of new species belonging to *Echinopyrrhosia* Townsend and *Eudejeania* Townsend, two interesting genera occurring in mountainous areas of the American tropics. All are large robust flies of striking appearance and little is known about them. Extensive collecting will probably bring to light many more species belonging to these genera. The types are in The American Museum of Natural History.

ECHINOPYRRHOSIA TOWNSEND

This genus was established by Townsend in 1914 (Ins. Ins. Mens., II, p. 90) for three species from the Andes of Peru, with *E. alpina* as the type. The genus is readily recognized by the short palpi and hairy eyes, the palpi being more than half as long as the third antennal segment. *Cryptopalpus* Rondani has the palpi shorter. These are the only two genera of Juriniinae (Epalpinae) with pilose eyes. The propleura are bare.

TABLE OF SPECIES

- 1.—Upper lobe of the squamae brown...2.
Upper lobe of the squamae grayish to yellowish, at most the border and base tinged with pale brown.....
..... *alpina* Townsend.
- 2.—Legs reddish.....3.
Femora and tibiae reddish brown to black; abdomen without pollinose spots or vitta.. *melanica* Townsend.
- 3.—Wings strikingly bicolored hyaline and brown..... *pictipennis*, n. sp.
Wings almost uniformly brownish colored, the crossveins narrowly darkened, the base black.....4.
- 4.—Dorsum of third and fourth abdominal segments almost all ochraceous....
..... *browni*, n. sp.

Pollinose markings on apical segments only faintly visible.....
..... *atypica* Townsend.

Echinopyrrhosia pictipennis, new species

Wings brownish with an irregular area beyond the middle and a sub-basal band cinereous hyaline. Length, 11 to 12 mm.

MALE.—Front two-thirds as wide as one eye, widening anteriorly, olivaceous, with brown reflections, the vitta reddish to blackish; bristles fine, becoming obsolete above, six or seven in each row; ocellars absent; verticals and outer verticals long and fine; hair of the head black, yellow on the lower part of the cheeks, the occipital pile yellow. Face, cheeks and occiput rich yellowish pollinose, the middle of the face paler. Cheeks about two-thirds as wide as the eye-height. Palpi slender, a little longer than the third antennal segment. Antennae black, the third segment a little longer than the second, with obtusely rounded apex; second aristal segment twice as long as wide. Eyes with grayish yellow pile.

Thorax black, yellowish-gray pollinose, the posterior calli reddish; mesonotum densely brownish pollinose, with four slender black vittae, the median pair ending a little behind the suture, the outer pair broadly interrupted. Bristles fine; acrosticals 0-1; dorsocentrals 2 or 3-4 but the anterior two pairs hairlike; normally three sternopleurals, the lower sometimes absent. Scutellum reddish in ground color and with yellowish tinged, whitish pollen, the bristles spikelike, the hair sparse.

Legs dark reddish, the tarsi black; front coxae more or less blackened, and with gray pollen.

Wings brownish, the crossvein bordered with dark brown, the apical cell (except for a brown streak in the middle), the apical fourth of the discal cell, except for a brown median stripe, and a spot behind the apical fifth of the discal cell cinereous hyaline, the base of the wing black, followed by a cinereous-hyaline band; third vein with five or six bristles basally. Squamae white, the upper lobe brown. Halteres brown.

Abdomen castaneous reddish, with whitish or yellowish-tinged pollen, the venter mostly pollinose, the dorsum with the pollen forming a pair of very large, transverse spots on the third and fourth segments, which extend narrowly over the side margins at the base; on the second seg-

ment the pale pollen is narrowly conspicuous on the base, the disc with obscure pale pollen; third and fourth segments with brown pollen separating the pale bands. Second segment with about twenty spinose discals, the fourth bristled on the apical half; second and third segments with entire rows of marginal spines, the first without dorsal bristles. Genitalia small, the posterior forceps little longer than wide, with shallowly notched tip.

FEMALE.—Front about as wide as one eye, the upper pair of frontals present but not reclinate; two pairs of orbita; pollinose spots on the third and fourth abdominal segments deep dull yellowish.

TYPES.—Holotype, male, and paratype, male, Minza Chica, Volcano Tungurahua, Ecuador, 3750 m., April 3-15, 1939 (F. M. Brown), and allotype, female, Hacienda Talahua, Bolivar, Ecuador, 2900-3100 m., May 5, 1939 (F. M. Brown).

Echinopyrrhosia browni, new species

Wings brownish, with black base and subhyaline band beyond, the crossvein slightly darkened. Length, 11 to 11.5 mm.

MALE.—Head as in *pictipennis* but the frontal pollen is brownish olivaceous and the second antennal segment may be mostly reddish.

Thorax black in ground color, the posterior calli reddish; pleura with grayish-yellow pollen that becomes somewhat brownish above, the mesonotum with rich reddish-brown pollen and the four slender black vittae. Scutellum reddish with brownish-red pollen on the dorsum and yellowish pollinose border. The bristles of the mesonotum are as in *pictipennis* but are even finer.

Legs as in *pictipennis*. Wings as described above. Squamae white, the upper lobe brown. Halteres brown.

Abdomen rich brownish red, the third and fourth segments with very broad, entire or interrupted dull ochraceous pollinose fascia. On the venter there is considerable white pollen near the middle. The bristles are as in *pictipennis* except that those on the fourth segment occupy little more than the apical third.

TYPES.—Holotype, male, and paratype, male, Minza Chica, Volcano Tungurahua, Ecuador, 3100 m., April 26, 1939, and 3750 m., April 3-15, 1939 (F. M. Brown).

I am indebted to Mr. David G. Hall for comparing the above species with material in the U. S. National Museum.

EUDEJEANIA TOWNSEND

TOWNSEND, 1912, Proc. U. S. N. M., XLIII, p. 334.

Bombyliojeania TOWNSEND, 1931, Rev. de Ent., I, p. 352.

This genus was established by Townsend in 1912 with *E. subalpina* Townsend as the genotype. The species are large, bristly flies with subquadrate abdomen which tapers gently from the base to apex, the apex strongly concave in the middle and with large spine bunches on each side, the intermediate segments without discals but with row of long, closely set marginals. In some specimens there may be a few bristles placed in a secondary marginal row very close to the marginals but these cannot be considered discals. The hair is long. The color is usually black but the abdominal color ranges from black to castaneous or reddish brown. The propleura and eyes are bare and the bristles of the thorax are greatly reduced in number and strength: acrosticals usually absent but one sometimes present in front of the suture; dorsocentrals represented by from one to four pairs, sometimes only the prescutellar pair present, but there are often two presutural and rarely two postsutural, all long and fine. The scutellum bears stout spines in strong contrast to the weakly bristled thorax.

Townsend separated *Bombyliojeania*, with *Dejeania canescens* Macquart as the type, on the basis of the wider palpi and the presence of long, white crinkly hair on the thorax and abdomen. I can see no other differences and since the width of the palpi varies in species lacking white pile I feel the *Bombyliojeania* is unnecessary. In a specimen close to *canescens* the pale hair is as long as the bristles but scarcely crinkly and in a second species with much shorter white hair it is quite straight.

The species are very uniform in appearance and it is difficult to determine specific limits. However, in the males there is a difference in the genitalia. Other characters that may be used for the distinction of species are to be found in the general coloration, color of wing veins, color of legs, color of pollen on head and other parts and the color, length and arrangement of the hair or pile.

TABLE OF SPECIES¹

- 1.—Abdomen with black hair.....4.
 Abdomen clothed with white or pale yellow pile.....2.
 2.—Scutellum with abundant pale pile.....
 *canescens* Macquart.
 Scutellum with scarcely any white pile.....3.
 3.—Palpi black; pale pile not as long as the bristles.....*albipila*, n. sp.
 Palpi reddish; pale pile longer than the bristles.....*pilosa*, n. sp.
 4.—Palpi reddish or yellowish.....5.
 Palpi brown or black.....7.
 5.—Face luteous or reddish yellow.....6.
 Face brown to blackish in ground color.....*alpina* Townsend.
 6.—Wings pale brownish with yellow veins.....*punensis* Townsend.
 Wings deeply smoky throughout.....
 *nigra* Townsend.
 7.—Legs black, the tibiae and tarsi silvery
 *argyropus* Schiner.
 At least the tibiae and tarsi yellowish.....8.
 8.—Tarsi whitish.....12.
 Tarsi and tibiae yellow.....9.
 9.—Squamae brownish, with darker border.....*subalpina* Townsend.
 Squamae brown to black.....10.
 10.—Femora black on basal half or more.....
 *femoralis*, n. sp.
 Femora reddish.....11.
 11.—Second aristal segment not more than twice as long as wide.....
 *pachecoi*, n. sp.
 Second aristal segment more than three times as long as wide.....
 *huascarayana* Townsend.
 12.—Larger, over 17 mm.; pile of thorax long and suberect.....*browni*, n. sp.
 Under 14 mm.; pile rather short and subappressed.....*pallipes* Macquart.

Eudejeania canescens Macquart

Dejeania canescens MACQUART, 1846, Dipt. Exot., Suppl. I, p. 143.
Bombyliojeania canescens TOWNSEND, 1931, Rev. de Ent., I, p. 352.

If Townsend has examined the type of this species there should be no doubt about

¹ *E. mexicana* and *pallipes* Desvoidy, from Mexico, are not included.

its identity since he states that there is long white hair in the scutellum. This does not agree with the two species before me, both of which have only ordinary black hair. The type came from New Granada (Colombia or Venezuela) and the species is said by Townsend to range from there to Bolivia.

Eudejeania albipila, new species

Black, the abdomen clothed with white pile that is not nearly so long as the bristles. Length, 18 mm.

MALE.—Head black and brown in ground color, with rich brownish pollen that becomes grayish white along the orbits, that on the sides of the facial depression and on the parafacials appearing dull whitish from dorsal view. Front wider than one eye, with about nine pairs of frontals and two or three in a secondary row anteriorly; parafacials with brown pollen except along the anterior half of the orbits. Hair black; occipital pile white. Palpi black, broad, narrowing on the basal third. Antennae black, the apices of the basal segments somewhat reddish; third segment large; second aristal segment fully three times as long as wide.

Thorax dull black, with brown pollen that leaves four black vittae. Only the posterior pair of dorsocentrals present, the acrosticals absent; one sternopleural. Scutellum with black spines and black hair, a few of the hairs on the apical half broadly tipped with white.

Femora mostly black on the basal half, reddish apically, the hair black. Tibiae and tarsi orange-yellow and with yellow hair and bristles.

Wings pale brownish, more grayish anteriorly, the veins mostly brown. Squamae brown.

Abdomen dull blackish, the hair of ordinary length, black basally, white on the apical half or more.

HOLOTYPE.—Male, Minza Chica, Volcano Tungurahua, Ecuador, 3750 m., April 3–15, 1939 (F. M. Brown).

This species, because of the broad palpi, belongs with *canescens* but is readily distinguished by the shorter pale hair and partly black legs.

Eudejeania pilosa, new species

Dull black, the abdomen with very pale yellow pile which is fully as long as the bristles. Length, 17 mm.

FEMALE.—Head dark in ground color, the middle of the facial depression and epistoma brownish red; pollen cinereous yellow, cinereous on the facial depression and on the broad middle of the parafacials when viewed from in front. Front as wide as one eye above, widening anteriorly, the parafacials and vitta dark brown, the brown of the former bordered with obscure

brownish yellow, the frontal vitta reddish-brown pollinose from frontal view. Eight or nine pairs of frontals; no orbitals. Pile of the occiput yellow, more reddish below the cheeks. Hair black. Palpi dark reddish. Antennae blackish, the basal segments somewhat reddish; second segment of arista scarcely three times as long as wide.

Thorax dull blackish, the pleura and front of the mesonotum with dull grayish-brown pollen, that on the mesonotum forming broad, obscure vittae. Acrosticals and dorsocentrals absent except for the posterior pair of the latter. Hair black, subappressed on the dorsum. Scutellum with stout spines on the apical half or more and with erect black hair, at most a few hairs on the apex whitish.

Legs reddish, the tibiae and tarsi paler and with golden-yellow hair and bristles.

Wings brownish, the base darkened; veins mostly dark reddish. Squamae dark brown.

Abdomen dull blackish, perhaps somewhat grayish-brown pollinose, clothed with very long, pale yellowish pile, that on the fourth segment exceeding the length of the bristles.

HOLOTYPE.—Female, Maripi, Bolivia, 6200 ft., April 2.

Although close to *canescens* this species is readily distinguished by the reddish palpi.

Eudejeania alpina Townsend

TOWNSEND, 1913, Psyche, XX, p. 106.

I have no specimens before me at the present time but have examined the types. It is a large species, about 18 mm. long and is distinguished from the allied forms with reddish palpi by having the face brown or black in ground color. (Peru.)

Eudejeania punensis Townsend

TOWNSEND, 1913, Psyche, XX, p. 105.

This is a very striking species with reddish palpi and broadly yellowish bases to the wings. Its length ranges from 14 to 16 mm. Paratype material is before me. (Peru.)

Eudejeania nigra Townsend

TOWNSEND, 1912, Proc. U. S. N. M., XLIII, p. 335.

This is another small species, 15 to 16 mm. in length, with reddish palpi. It may be distinguished from *punensis* by the darker, reddish-veined wings, the base not conspicuously yellowish. (Peru.)

Eudejeania argyropus Schiner

Dejeania argyropus SCHINER, 1868, Novara Reise, Dipt., p. 337.

Black, the tibiae and tarsi silvery; wings wholly blackish brown. Length, 15 to 17 mm.

MALE.—Head black or brown, with yellowish-brown pollen, the pollen in the antennal grooves grayish and that on the lower occiput and cheeks golden-gray. Front rich reddish brown, the parafrontals sometimes darker in the middle, the vitta deep black but with brownish-yellow pollen from frontal view; front three-fourths as wide as one eye; eight to ten pairs of frontals. Hair black, the occipital pile whitish with yellow tinge. Palpi black, broad, tapering basally. Antennae black; second aristal segment three times as long as wide.

Thorax dull black, with thin brown pollen and four dark vittae. No acrosticals; two or three presutural dorsocentrals and a single posterior pair; two sternopleurals. Hair black, rather subappressed.

Legs black, tibiae and tarsi with silvery white hair, the bristles black.

Wings blackish brown; veins brown. Squamae blackish.

Abdomen slightly shining black, with thin brown pollen beneath.

Two males, Runtun, Volcano Tungurahua, Ecuador, 3000 m., January 9, 1939 (F. M. Brown).

The black legs at once distinguish this species from any other so far described.

Eudejeania subalpina Townsend

TOWNSEND, 1912, Proc. U. S. N. M., XLIII, p. 334.

I have examined the types but do not have specimens before me at the present time. The legs are reddish, with yellowish tibiae and tarsi, and the palpi are black. It seems that it may be distinguished from related forms by the brownish, black-bordered squamae. Length, about 18 mm. (Peru.)

Eudejeania femoralis, new species

Dejeania pallipes WULP, 1888 (nec Macquart), Biol. Centr. Amer., Dipt., II, p. 8.

Black, the legs pale with the femora mostly blackish. Length, about 17 mm.

FEMALE.—Head black or brown in ground color; antennal grooves whitish pollinose, the middle of the face brown; parafacials brown pollinose inwardly, broadly whitish along the orbits, the pale pollen extending onto the lower part of the front. Front scarcely three-fourths as wide as one eye, opaque black, from frontal view with some obscure brown pollen, the frontal vitta with brownish-yellow pollen; seven pairs of frontals and one or two pairs of orbitals, the anterior pair divaricate (there are two orbitals on only one side). Hair black; occipital pile reddish yellow; cheeks with red-

dish-brown pollen, the lower occiput broadly grayish. Palpi black. Antennae black; the second segment almost as long as the third; second aristal segment twice as long as wide.

Thorax dull black, the pleura with brownish pollen; acrosticals 1-0; dorsocentrals 2-1; two sternopleurals.

Femora black with the apical third or less reddish; tibiae and tarsi yellow, with pale yellow hair, the bristles on the tibiae black and golden-brown.

Wings blackish brown, with brown veins. Squamae blackish.

Abdomen brownish black, somewhat shining, the hair black.

HOLOTYPE.—Female, El Volcan, Chiriquí, Panama, February 24, 1936 (W. J. Gertsch).

Eudejeania pachecoi, new species

Black, the legs yellowish; second aristal segment not twice as long as wide. Length, 16 mm.

FEMALE.—Head blackish, reddish-brown pollinose, the front dull black with just a trace of brownish pollen. Front slightly wider than one eye; seven or eight pairs of frontals and one pair of strong proclinate orbitals. Hair black, the occipital pile reddish yellow. Palpi black. Antennae black, second aristal segment scarcely twice as long as wide.

Thorax dull black; pleura with blackish-brown pollen. No acrosticals; two presutural dorsocentrals, one just behind the suture and another before the scutellum (the anterior postsutural dorsocentral may be adventitious—there is some foreign material on one side where the bristle should be so it is impossible to tell whether it was broken off); two sternopleurals.

Femora reddish; tibiae orange, with yellow hair and bristles; tarsi yellow, with yellow hair.

Wings blackish brown, the veins mostly dark reddish. Squamae brown.

Abdomen black, with black hair.

HOLOTYPE.—Female, Guatemala (M. Pacheco).

Eudejeania huascarayana Townsend

TOWNSEND, 1914, Ins. Ins. Mens., II, p. 171.

This is one of the large black species with pale legs, black palpi and reddish wing veins but the base of the wing is not pale. It was described from Peru. Before me are three specimens of each sex from Minza Chica, Volcano Tungurahua, Ecuador, 3750 m., April 3-15, 1939 (F. M. Brown), and one female, Rio San Pedro, Prov. Pichincha, Ecuador, 2400 m.,

November 10, 1938 (F. M. Brown). These agree perfectly with Townsend's description but the identification must be verified by comparison with type material.

Eudejeania browni, new species

Abdomen subshining reddish brown or pale castaneous; palpi black; tarsi whitish. Length, 17 to 18 mm.

MALE.—Head black and brownish in ground color, the pollen of the face grayish yellow laterally, becoming brown toward the ridges, the middle of the facial depression brown, the sides whitish. Front brown, the vitta black, grayish brown from frontal view; front slightly wider than one eye; eight or nine pairs of frontals. Hair black; occipital pile yellow. Palpi black. Antennae black; the second segment with a small patch of golden pollen on the upper surface near the apex; second aristal segment twice as long as wide.

Thorax rather castaneous, the mesonotum black in ground color except laterally; pollen rather dark brown, the darker vittae not strong. No acrosticals; usually two presutural dorsocentrals and the prescutellar pair. Scutellum castaneous. Hair black.

Femora reddish to brownish red, the tibiae paler and with whitish hair and black bristles; tarsi whitish, becoming yellow apically, the hair and bristles white.

Wings dark brown, the veins reddish brown. Squamae dark brown.

Abdomen reddish brown, the hair black.

TYPES.—Holotype, male, and paratypes, two males, Minza Chica, Volcano Tungurahua, Ecuador, 3750 m., April 3-15, 1939 (F. M. Brown).

Eudejeania pallipes Macquart

Dejeania pallipes MACQUART, 1843, Dipt. Exot., II, pt. 3, p. 34.

This is a small species, about 14 mm. in length, originally described from Colombia. Before me is a single male from Colombia that agrees well with the original description. The tarsi are very pale yellow, with white hair and bristles while the tibiae are clothed with pale yellow hair and have black bristles. The wings are of a lighter brownish than in allied species, with slightly darker base. The antennal grooves are described by Macquart as whitish, but the head has been wet in my specimen so this point cannot be checked.

